

Abstract

A nucleic acid encoding the 37-kDa pneumococcal surface adhesion A protein (PsaA) from *Streptococcus pneumoniae* and isolated nucleic acids comprising a unique fragment of at least 10 nucleotides of the 37-kDa protein. Also-provided are purified polypeptides encoded by the nucleic acid and the nucleic acids fragment of at least 10 nucleotides. Further provided are monoclonal antibodies which selectively bind PsaA. Peptides are provided that immunospecifically bind to the monoclonal antibodies and are immunogenic against *Streptococcus pneumoniae*. Vaccines comprising such immunogenic polypeptides and methods of conferring protective immunity against *Streptococcus pneumoniae* infection by administering therapeutic compositions comprising the immunogenic peptides are disclosed. Methods of detecting *Streptococcus pneumoniae* using antibodies or antigens and methods of preventing and treating *Streptococcus pneumoniae* infection are provided. A method of identifying the sequence of a peptide potentially capable of eliciting protective immunity against a pathogenic microorganism is provided.